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SOME FACTORS AFFECTING THE LOCATION OF PRODUCTION FOR EGGS AND POULTRY *

by
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Nature imposes hardly any absolute limitations upon the location of poultry production in the United States--eggs and poultry meat can be produced in every State. Production costs will vary among locations, but this is not an absolute deterrent. Such relatively high-cost egg producing States as California and New Jersey have a place in egg business, together with Iowa and Kansas. High-cost States have an advantage in marketing that enables them to continue as important competitors in egg and poultry production.

In inducing poultry production in an area, closeness to market and consequent higher-than-average prices for products offset high costs. The net difference between costs and returns would be the starting point for a strict economic analysis as a basis for projecting trends in location of production. A strict economic analysis would project prospective trends in costs and returns so that area differences could be compared. Differences among areas as well as comparable computations for alternative enterprises should be given. Such comparisons would reveal the likely geographic patterns of future poultry production.

But in actual practice, I think the choices which result in greater poultry development in Location A than in Location B are made according to concepts more complicated than the foregoing. Motivations for many of the decisions aren't entirely economic, although the actions certainly have economic effects. Early in this discussion, I shall mention the non-price bases for many of the choices; later, I shall dwell in considerable detail on aspects of small-scale egg production conducted by the farm housewife, the effects of broiler contracting, and the side-line and semi-retirement egg and broiler production by non-farmers. But to me it all boils down to a belief that egg and poultry meat production of the future will remain diverse both in geographic location and in organization of the enterprise, with evolutionary rather than revolutionary changes in the location of the industry.

As a personal judgment, I can recognize the southeastern United States as a favored area for continued expansion of broiler production, partly at the expense of the Northeast and the Pacific Coast. I can see certain types of egg production prospering in Minnesota, Iowa, and

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Wisconsin, at the expense of smaller enterprises in the same area, and at the expense also of northeastern producers, and perhaps Pacific Coast ones also. For possible shifts in the location of turkey production, I have no fixed ideas.

Economic Bases for Location Choices

Feed represents about 60 percent of the cost of producing eggs or poultry meat. So a location close to the source of feed supply tends to favor a poultry enterprise. Ordinarily this would be construed to favor a midwestern location, and in fact I think it does; but before we generalize, let's look a little closer at the data.

Chickens don't eat just straight feed grains -- or at least the producer who feeds only home-produced grains won't long be a factor in commercial competition. The economic criterion regarding feed costs is based on the price of a balanced ration. And on that, the advantage of being close to crop sources becomes obscured by trade customs affecting markups, by credit practices, and by the degree of competition prevailing among suppliers.

The Agricultural Marketing Service makes monthly surveys of farmers' paying prices for poultry feeds. You will be surprised to hear that in mid-July of this year the average price paid by farmers for laying mash in the Northeast was only 2 cents per hundred pounds higher than the average price in the West North Central Region, where it was \$4.27 per hundred pounds. I am sure that purchases by thrifty commercial poultrymen in both of these areas, and in other areas as well, can better that average price, but the point that I want to make is that taken as a whole the natural advantage that one would expect in the grain belt does not exist. On a gross overall basis, to secure the advantage, the poultryman has to go out and make the right arrangements for himself so that he can swing the bargaining power to bring the price down from the average level being paid by his noncommercial neighbors.

The Department of Agriculture also has a monthly report on farmers' paying prices for a composite poultry ration. Among States and regions this poultry ration price shows greater differences than reported prices for laying mash, but we have to be cautious in our interpretation of this. The composition of "poultry ration" was last surveyed in 1943, at a time when farm practice in combining home-grown feeds with purchased concentrates was much less exact than at present; furthermore, at that time the composition of poultry ration included different proportions of home-grown grains in the respective States. Figures for the various States are therefore not comparable, and the possible advantage to mid-western States is probably overstated.

Availability of home-grown grains plus the opportunity to combine them with commercial concentrates or balancers gives grain-growing poultrymen

an advantage over competitors who have to buy their entire ration. This principle is almost equally applicable to poultrymen whose supplies are locally-grown grains from surplus grain areas outside the traditional Corn Belt. On a vacation trip that took me through Tidewater Virginia and North Carolina earlier this year, I saw corn fields as large as those in Iowa; and feed mixers on the Del-Mar-Va Peninsula have told me that, barged across the Chesapeake Bay, grain from these fields and other eastern grain, supplied Del-Mar-Va mills for several months each year.

Labor costs and alternative opportunities for people who turn to poultry raising also affect the location of production, especially of broilers, because the usual arrangement under financing is much like an employer-employee relationship. (In contrast, egg production is usually in the hands of an owner who considers himself in business with an investment to protect, and who is reluctant to compare his returns with wage rates.) Broiler production in the last few years has expanded most rapidly in Georgia, Alabama, and Mississippi. In those States, USDA estimated the composite farm wage rate to have been less than 50 cents an hour on July 1 of this year. Outside the regions of which those States are a part, none had average rates below 61 cents. At the other end of the scale the highest composite average rates—a dollar an hour or more--were in the Northeastern States and on the Pacific Coast. By more than mere coincidence those latter two groups of States include California and Connecticut, two States in which broiler growing is noticeably declining.

Higher Prices Near Markets Help Offset Higher Costs

This concept of where poultry can be produced most cheaply has to be balanced against an understanding of where the principal ultimate markets are and where the highest prices can accordingly be expected.

Cities and towns represent our market for eggs and poultry. The small amount of processing required for direct marketing of eggs and poultry meat means that many people who live in the country either are self-suppliers or have a loose and informal arrangement with nearby producers. It is to the big central markets that we have to look for the forces that make prices.

Prices in the terminal markets are higher than in the areas from which the terminal markets draw their supplies, and prices at intermediate points fall in line. In deficit areas which are located on the "far" side of recognized terminal markets, produce is re-sold for even higher prices than those received in the terminal markets. This is necessary in order to attract supplies. Combined with consumer preference for "nearby" produce, this price structure serves to give an advantage to producers near cities that have to draw farthest for their supplies. To this extent, some producers located in areas of higher-than-average cost have a considerable offset in terms of higher-than-average prices received.

To a greater extent than commonly realized, some of the advantages enjoyed by producers located close to market can be enjoyed by moderately specialized producers more distantly located. Lower marketing costs related to transportation can't be matched, but the premium on "nearby" eggs and poultry is really, in the basic analysis, a premium for quality. AMS' researchers have found that Minnesota and Wisconsin producers selling eggs into a quality egg program, with flocks large enough to justify frequent gathering and pickup, were paid on a basis comparable to eastern market prices for high-quality eggs. These farmers did not receive the same price as that paid the eastern producer, yet their price, grade for grade, was about equivalent to the price paid the eastern producer, minus transportation. This kind of situation goes a long way toward equalizing midwestern and East Coast (or Pacific Coast) returns, as compared with previous practices.

Although it tends to favor the Midwest, this kind of quality egg development favors only the participants in it, and the run-of-the-mill producer is left out in the cold. I think the kind of flock that provides pin-money for the midwestern farm wife is on the decline; but from here on the decline is likely to be painfully slow because the judgments regarding it aren't made according to conventional economics. It's an arrangement that permits the farm wife, through the poultry flock, to expand the household budget by tapping the farmer's account at the local elevator.

Another point: these midwestern poultry flocks, even when conducted on a basis larger than a pin-money deal, have a modest day-to-day labor requirement. On most general farms the occasional need for heavy work inputs dovetails with the labor supply and the work requirements of other enterprises. The opportunity to share cost items such as truck and water supply also means that added expense on account of the chickens is less on general farms than on highly specialized farms, where the poultry enterprise is forced to carry the entire farm overhead.

These factors explain why general farms will continue to produce an important proportion of the U. S. egg supply. But to a greater and greater degree, these flocks on general farms will be managed under businesslike conditions that more and more closely approach the management practices of specialized poultry farms closer to the centers of population.

Just as distant egg producers are staking a place for themselves in quality egg markets, a new technology enables low-cost broiler producers to serve far-away markets. When antibiotic additives are mixed in the chill water for poultry, several strategic days are added to the "shelf life" of ice-packed fresh poultry. This enables Texas and Mississippi broilers to sell in competition with native West Coast chickens, and is a factor in the cut-back in chicks placed in the latter area.

Areas Must Support Industry Services

The areas where poultry enterprises will grow and prosper have to be specialized enough, and to include sufficient volume, to support the service and marketing facilities that the modern poultry industry needs.

A lone commercial poultry enterprise, isolated among farmers pursuing other specialties, won't have a choice of feed suppliers competing for his business. If an isolated producer should need a poultry-remedy to quell an outbreak of disease, the chances are that a supply house at the county seat would have to order it, for the store would not be likely to keep it in stock. When the isolated commercial producer had eggs or chickens to sell, in quantities larger than local retailing would absorb, again he would have to create an outlet, rather than find a choice of ready-made outlets such as occur in an established poultry community.

In an established poultry community the already-existing marketing facilities handle sufficient volume to enable each buyer to keep his operating costs fairly low, and to compete from an initial price level that reflects low overhead costs per unit. This condition is frequently overlooked by people considering only the physical aspects of poultry production. For an independent pioneer to undertake any kind of poultry production on a scale sharply different from nearby layouts is to undertake a difficult economic challenge. Unless carefully planned by adequately financed agencies, the poultry business will not mushroom up overnight in new areas.

Financing, as in Broiler Production

This leads us to the subject of broiler financing. Certainly in the development of chicken meat production the business sprang up overnight in new areas. It did indeed, but under circumstances that fit the limitation in the preceding paragraph, "carefully planned and adequately financed . . .".

The central figure in broiler production is the financier or contractor. Even a small contractor -- a cross-roads feed dealer--will put out a flock a week. At that rate, he will have an average of 10 flocks on feed at a time. I submit that by his own enterprise he has created a local specialized poultry industry -- to say nothing of additional similar promotions probably originating from other nearby feed dealers.

Contract broiler growing has had its most enthusiastic acceptance in areas that lacked satisfactory sources of income and employment for a surplus farm population. In the Chesapeake Bay area, broilers were accepted when profits from egg production and from vegetable crops were failing. In northwest Arkansas, fruit enterprises, particularly peaches, were on the downgrade when broilers were introduced. Returns from cotton farming were unsatisfactory in north Georgia when the broiler industry gained its toehold there.

Chronically low income, or the failure of previous agricultural standbys, created circumstances in which the broiler industry could thrive, but this does not explain why it grew in Georgia earlier than in Mississippi and Alabama, or why the center of hatching egg production remained so long in New England. We look for explanations of these aspects of the development of the industry in a study of people and personalities.

The Role of Individuals

Recently a widely known geographer asked the U. S. Department of Agriculture to explain the tremendous development of turkey production in Minnesota, and the question was referred to me. I found it a provocative question. I was puzzled. While Minnesota doesn't have the climatic advantages of California, it does have other previously-established agricultural enterprises, and it certainly is more distant from the centers of consuming population than, for example, Virginia, the fourth largest producer. So I called up my friends at the Agricultural Research Center in Beltsville, Md., and put the question to them. "Well", said Stanley Marsden, -- and not in jest, either-- "the explanation is Doc Billings." I am not proposing to you that the dynamic personality of one individual can make or break poultry development in a State. I want to say that the basic physical resources of Minnesota must also have indicated some promise for turkeys -- but the missionary work of Doc Billings can certainly explain why nearly equivalent resources in neighboring Iowa, or in Nebraska, weren't equally rapidly developed to make either of those States -- rather than Minnesota -- the runner-up State in U. S. turkey production.

The personalities and personal choices that influence location of poultry include leaders who are recorded in poultry annals -- the developers of broiler production in Georgia, and the New England breeders who had already developed fast-growing strains of Plymouth Rock and New Hampshire and Rhode Island Red chickens at the time a demand materialized for broiler stock. By having such stock and the breeding know-how behind them, they established New England as the early center of breeding and hatching egg supply for meat-type chickens.

It is worth an aside to note that a lot of the breeding and hatching egg activities are migrating to the Southeast, the greatest chick market. Evidently, as a business becomes more commercialized it pays greater heed to impersonal economic factors; but in the early stages, the chance effects of personal interests and talents are significant.

Somewhat less thoroughly heralded are the choices and preferences of thousands of smaller enterprisers whose individual actions have influenced the location of the poultry population, especially egg flocks. What I have in mind is really only a step removed from the cliché about the city man's wish to "retire to the country and raise chickens." Chickens don't require heavy labor or a tremendous investment. They are a familiar species of domestic animal, not frightening nor overwhelming to an urbanite,

as a cow or horse would be. So migrants from the city are attracted to chickens -- and therein is the basis for the development of the commercial egg business in central New Jersey, now one of the most intensive egg-producing areas in the United States. Many poultry farmers in that area are people who grew up in the city, or abroad, and who found that, in a densely-settled poultry community, they could approach their former urban standards of conveniences and amenities, while indulging that yen to raise chickens. It was profitable most of the time too, until last year.

Similar concentrations of specialized egg production on small acreages are found in California, and in my one visit to the area I formed the impression that much of this too was done by ex-city people. Many of them were middle-aged and older, and a frequent situation was that they had been attracted by California's famed climate, but that on arriving they had concluded they were not quite ready to retire.

Age of Operators

The 1954 Census of Agriculture has summarized its findings on the age distribution of operators of specialized poultry farms. On such farms in 1954, half of the operators were 55 or older, and 20 percent more were 45 to 54 years old. (A farm must receive 50 percent of its gross income from eggs and poultry to be classified as a specialized poultry farm.) This age distribution probably means that many specialized poultry farms will disappear when their operators age further, because the short-term prospects for the poultry business will not appear rosy enough to attract newcomers to specialized farms to take the place of those who are growing old. Since these specialized farms are so numerous in the Northeast and on the Pacific Coast, it seems to me that this is additional reason for expecting a reduction in the share of the nation's future egg and poultry output from those areas.

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Population, and egg and poultry production, by States and regions, 1956: With selected percentage comparisons to United States total*

State and region	Population 1/		Eggs produced on farms		Broilers produced		Turkeys raised	
	As a percentage of U. S. total		As a percentage of U. S. total		As a percentage of U. S. total		As a percentage of U. S. total	
	Mil.	Pct.	Bil. eggs	Pct.	Mil.	Pct.	Mil.	Pct.
Maine	0.9	1	0.7	1	.43	3	0.1	
New Hampshire	.6		.5	1	.8	1	.1	
Vermont	.4		.2		1		.1	
Massachusetts	4.8	3	.8	1	.19	1	.6	
Rhode Island	.8		.1		.2		.3/	
Connecticut	2.2	1	.7	1	.32	2	.3	
New York	16.2	10	2.0	3	.15	1	.9	
New Jersey	5.4	3	2.7	4	.11	1	.3	
Pennsylvania	11.0	7	3.6	6	.36	3	2.1	
North Atlantic	42.3	25	11.3	19	1.67	12	4.6	6
Ohio	9.1	5	2.5	4	.19	1	3.2	4
Indiana	4.4	3	2.5	4	.39	3	2.1	3
Illinois	9.4	6	3.1	5	1	1.2	2	
Michigan	7.5	4	1.7	3	1	1.1	1	
Wisconsin	3.8	2	2.4	4	.17	1	2.5	3
East North Central	34.2	20	12.1	20	.88	7	10.0	13
Minnesota	3.2	2	4.2	7	3		9.6	12
Iowa	2.7	2	5.0	8	.5		5.8	8
Missouri	4.3	3	2.0	3	.32	2	3.1	4
North Dakota	.7		.5	1	.4/		.6	
South Dakota	.7		1.3	2	.4/		.6	
Nebraska	1.4	1	1.8	3	.3		1.0	1
Kansas	2.1	1	1.7	3	.2		.9	1
West North Central	15.1	9	16.6	27	.44	3	21.6	28
Delaware	.4		.1		.86	6	1.0	1
Maryland	2.8	2	.4	1	.67	5	.4	1
Virginia	3.7	2	.8	1	.63	5	6.5	8
West Virginia	2.0	1	.4	1	.24	2	1.8	2
North Carolina	4.4	3	1.7	3	.94	7	1.3	2
South Carolina	2.4	1	.5	1	.13	1	1.2	2
Georgia	3.7	2	1.2	2	.223	17	.4	1
Florida	3.8	2	.6	1	.12	1	.2	
South Atlantic 2/	24.0	14	5.8	10	.582	43	12.8	17
Kentucky	3.0	2	1.1	2	.12	1	.4	1
Tennessee	3.5	2	1.0	2	.18	1	.2	
Alabama	3.1	2	.8	1	.82	6	.3	
Mississippi	2.1	1	.7	1	.53	4	.2	
Arkansas	1.8	1	.6	1	.99	7	2.2	3
Louisiana	3.0	2	.4	1	.16	1	.1	
Oklahoma	2.2	1	.8	1	.6		1.0	1
Texas	8.9	5	2.3	4	.100	7	4.5	6
South Central	27.7	17	7.7	13	.386	29	8.7	11
Montana	.6		.2		.4/		.1	
Idaho	.6		.3		.2		.2	
Wyoming	.3		.1		.4/		.3/	
Colorado	1.6	1	.3	1	.2		1.2	2
New Mexico	.8		.1		.4/		.1	
Arizona	1.1	1	.1		.4/		.1	
Utah	.8		.3	1	.2		2.7	4
Nevada	.2		.3/		.4/		.3/	
Washington	2.7	2	.9	1	.11	1	.7	1
Oregon	1.7	1	.6	1	.8	1	1.4	2
California	13.4	8	4.5	7	.52	4	12.6	16
Western	23.9	14	7.6	12	.78	6	19.2	23
United States 2/	167.2	100	61.0	100	1,345	100	76.9	100

1/ As of July 1; excluding Armed Forces overseas. 2/ Including District of Columbia. 3/ Less than 0.05.

4/ Less than 0.5. 5/ Totals may not add due to rounding. *Percentages rounding to less than 1 percent are omitted.

